Q.1 An observer O is moving with the velocity 3 m/s in the direction as shown in the figure. Find the time till observer will be able to see his image in the plane mirror placed at an angle of 60° with the horizontal.



Q.2 An object M is placed at a distance of 3 m from a mirror kept at some height with its lower end at 2 m from ground as shown in the figure. There is a person at a distance of 4 m from the object. The ratio of minimum height and maximum height of the person required to see the image of the object will be



- Q.3 A person of height 2 m is standing in front of a plane mirror. Find the minimum height of the mirror required, so that the person can see his full sized image.
 (A) 4 m
 (B) 2m
 (C) 1m
 (D) 0.5m
- Q.4 A meter stick (object) is placed in an upright position in front of a plane mirror as shown in the diagram. The image of the meter stick is equidistant from the mirror. Suppose that the meter stick is equipped with a working eyeball capable of viewing the top and the bottom of its image. The eyeball is located at the 90 cm mark on the meter stick. Determine the location of the intersection of the eye's line of sight with the mirror as the eyeball sights at the top of the image.
 (A)50 cm
 (B)45cm
 (C)90cm
 (D)95cm
- **Q.5** A child and a man are standing in front of a plane mirror as shown in the figure. What should be the minimum height of the mirror so that the child can completely see his/her own image as well as the man's image in the mirror.



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$$(A)^{\frac{H}{2}}$$
 $(B)^{\frac{H}{6}}$
 $(C)^{\frac{3H}{2}}$
 $(D)^{\frac{5H}{6}}$

Q.6 A person 1.6 m tall is standing at the centre between two walls 3 m high. What is the minimum size of a plane mirror fixed on the wall in front of him, if the person wants to see the image of the full height of the wall behind him?



- Q.7A plane mirror of length 8 cm is moving with a speed of 3 m/s towards a wall as shown in the figure.
The diametrical length of spot formed on the wall is?(Assume spot to be circular)
(A)4 cm(B)16cm(C)8cm(D)24cm
- **Q.8** The width of man's face is D. The distance between the eyes of the man is d. Then the minimum width of plane mirror to see his full face is $(1)^{D-d}$

(A) $\frac{D-d}{4}$ **(B)** $\frac{D-d}{2}$ **(C)**D-d **(D)** $\frac{D+d}{2}$

- Q.9A plane mirror 50 cm long hung on a vertical wall of a room with its lower edge 50 cm above the
ground. A man is standing in front of the mirror at 2 m distance. If his eyes is 1.8 m above the ground,
then the length of the floor in front of him visible to him in the mirror is :
 $(\mathbf{A})^{\frac{45}{26}}$ m(B) $^{\frac{35}{23}}$ m(C)100 cm(D)90 cm
- Q.10The image of a tree just covers the length of a plane mirror 4 cm tall when the mirror is
held 35 cm from the eye. The tree is 28 m from the mirror. What is its height?
(A) 300 m(B) 225 m(C) 324 m(D) 350 m

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
Sol.	(B)	(B)	(C)	(D)	(D)	(B)	(B)	(B)	(A)	(C)